

## **EVALUATION OF EFFECTIVENESS OF TRAINING AND DEVELOPMENT: The Kirkpatrick Model**

**AlYahya , Mohammed Saad**

University Utara Malaysia  
College of Business (UUM HRM)  
Malaysia .

**E-mail:** [msy330@hotmail.com](mailto:msy330@hotmail.com)

**Dr. Norsiah Binti Mat**

University Utara Malaysia  
College of Business (UUM HRM)  
Malaysia.

**E-mail:** [norsiah@uum.edu.my](mailto:norsiah@uum.edu.my)

### **ABSTRACT**

*Evaluation of training effectiveness is the measurement of improvement in the employee's knowledge, skill and behavioral pattern within the organization as a result of training program. This measurement help to match the cost incurred in the design and implementation of training with the associated benefits. Thus, it indicates whether the program has been able to deliver its intended goals and objectives. The purpose of this paper is to review the model of training effectiveness for the adoption by the human resources development executives in their planning, designing and implementation training program.*

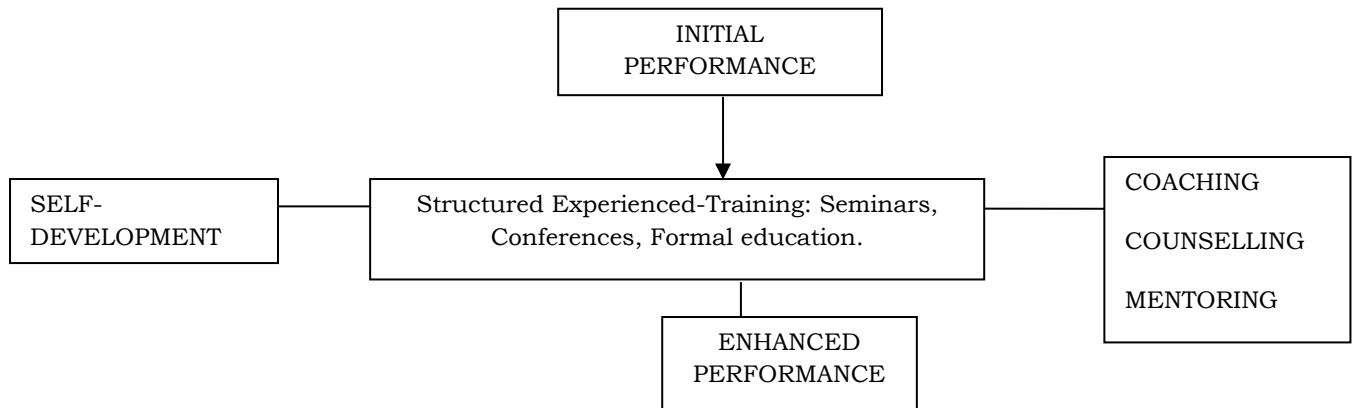
### **INTRODUCTION**

Training and human development activity has increase greatly over the past few decades. According to Fulmer (1988, p57), annual estimation of over \$40 billion is spent on human resources development (HRD) and training in university and graduate colleges in USA. Such huge expenditure on HRD requires evaluation to determine the effectiveness of training and human resource development program whether it meets its desired objectives.

It is very important to understand the fundamental differences between training and human resources development, this distinction is necessary when examine the methods of measuring training and human resources development.

### **Different between Training and Development**

While measuring the effectiveness of training and HRD, it is necessary to point out their similarities and differences with respect to improving management skill. Training is generally regarded as a subset of HRD. Figure 1 indicates that training can be referred to as a structured learning experience. Training activities such as seminars and workshops are normally centered on improving specific skill, whereas HRD concentrates on the improvement of all the necessary skill required by the employees of an organization to be effective. However, training is regarded as a tool for HRD, on the other hand, training can be regarded as a short term activities and HRD are regarded as having long term horizon. Meanwhile, they might be defined differently but their goal and objectives are the same, their activities tend towards enhancing employees knowledge and skill for effective performance.



**Figure:1,** Source: Gerrett & Brian (2007)

Organizations whether private sector or public sector are generally agree that training and development is very critical to the growth and development of the core activities in which the organizations engages in (Noe, 2002). Training is an aspect of human resources development function of the organization (Rajeev et al, 2009, p272). Dessler (2005) defined training as a process that applies different methods to strengthen employees' knowledge and skill needed to perform their job effectively. Other researchers on human resources development literature defined training with similar perspectives (Ivancevich, 2003; Mondy & Noe, 2005; Yong, 2003; Beardwell & Holden, 2003). Hughe (1988) perceive training as a powerful agent that brought about organizational expansion, development of capability and performance improvement.

For training initiative to be effective, organization need to examine the extent to which training and HRD system closely connected with the organizational strategy, and more important, the measure to ensure the effectiveness of training and development activities (Haslinda & Mahyidin, 2009, p.240). The evaluation is carefully designed to utilize the four levels of training effectiveness; reaction, learning, behavior and result derived from the program (Hamid Khan, 2002, 49). Organizations are increasingly lay emphasis on the contribution of the training program to organizational strategic goal and based the evaluation of training as the perquisite for investment in training program. Moreover, the effectiveness of training program in terms of its application to job is also given important consideration (Brinkerhoff, 2005).

Organizations are unwilling to invest in training program that has not been sufficiently evaluated in terms of its potential contribution to the organizational strategic goals and mission, and its effectiveness and uses on job to achieve the desired objectives (Noe & Schmitt, 1986). Chang and Ho (2001) however, considered training and development as an expensive investment. They often stated that training is unnecessary because most organizations are not sure about the actual contribution of training and development toward organizational performance due to lack of evaluation. Furthermore, Bramley and Kitson (1994) define training as a planned effort by an organization to increase employee's learning work related competence. Employees' training has become an important tools through which organization can improve its service quality, decrease labor cost and increase productivity and profitability (Kim, 2006).

Tracy et al, (2001) conceptualizes training effectiveness as comprises of training acquisition and transfer of training. Transfer of training is known to be good indicators of training effectiveness (Baldwin & Ford, 1988). Based on this, the behavioral changes that accompany training in work place could be a clear indication of training. According to Goldstein and Ford (2002) training is one of the most pervasive methods for improving job performance and enhancing employee's performance in a work environment. Kirkpatrick (2007) asserts that training is of little value to organization unless it translates into performance. Training effectiveness is thus a measure of the extent to which training

achieves its intended outcome, for instance to improve work performance (Krager, Ford & Salas, 1993). From another perspective, training evaluation is viewed as an important component of conceptualizing, designing, analyzing, developing and implementing an effective training program (IAEA, 2003, p13). Moreover, training evaluation has the advantage of identifying the area that needs further improvement and it may also provides an insight on methods of improvement (Goldstein & Ford, 2002).

## **LITERATURE REVIEW**

Human Resources Management (HRM) literatures have described training and development as a deliberate and concerted effort that aimed at improving and enhancing organizational performance. Training and development is essential for an organization to build and sustain competitive advantage in the organization's core competence. Definitely, employee's competence is specialized knowledge and skill that often enhanced by continuous training and development (Cascio, 1998; Beardwell, Holden, Claydon, 2004; Ivancevich, 2003; Mondy & Noe, 2005; Noe, Hollenbeck, Gerhardt & Wright, 2006, Yong, 2003; Torrington, Hall & Taylor, 2005). Training evaluation is further defined as a systematic process of data and information collection to examine whether training really achieved its intended purpose (Goldstein & Ford, 2002). Kirkpatrick (1998) referred to training evaluation as an evaluation of four different parts these includes; reaction, learning, behavioral changes and return on investment.

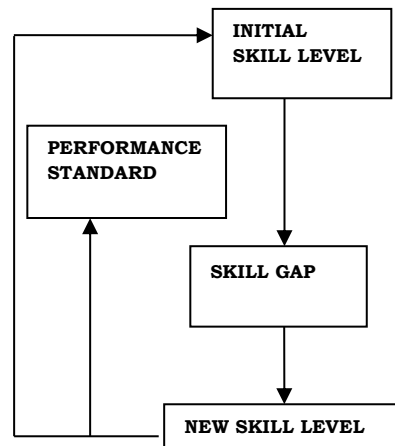
Haywood (1992) noted that in real world situation, there are many factors that influence the effectiveness of training and development in an organization and training is one out of many factors that could enhance individual and organizational performance. Mayer and Pipe (1983) suggests that the reasons for strategic plan for training evaluation is to evolve a careful methods of assessing and reporting training effectiveness, so that the finding can be used to improve training and training related activities (such as mentoring and other transfer of learning support). Generally, many organizations are concerned with the contribution of training to organizational performance, the feasibility of such rationale and appraisal are not always substantiated. Hung (2001) reasoned that training evaluation often concentrated on the quantity of training provided but not particularly on quality. Therefore to ascertain the effectiveness of training, training evaluation is required (Branley & Kitson, 1994; Cheng & Ho, 2001; Beardwell, Holden & Claydon, 2004).

The result produced from evaluation of training will enable the organization to determine precisely whether the training is effective or not. Broad and Newstrom (1992) argued that for a training to be effective, the employee must actually transferred the knowledge and skill learnt during training to the job. Hung pointed out that in most studies related to training effectiveness, the focus was on developing the linkage between training practices or factor (individual and organization) with training effectiveness. Evaluation research is defined as "the systematic application of social research procedure to assess the conceptualization, design, implementation and utility of...program". Further definition of training evaluation comes from Boulmetis and Dutwin (2000), they defined evaluation as a deliberate attempt of collecting and analyzing data in order to determine whether and to what extent the objective of training program were achieved.

## **THE GENERAL STRUCTURE OF SUCCESSFUL EVALUATION**

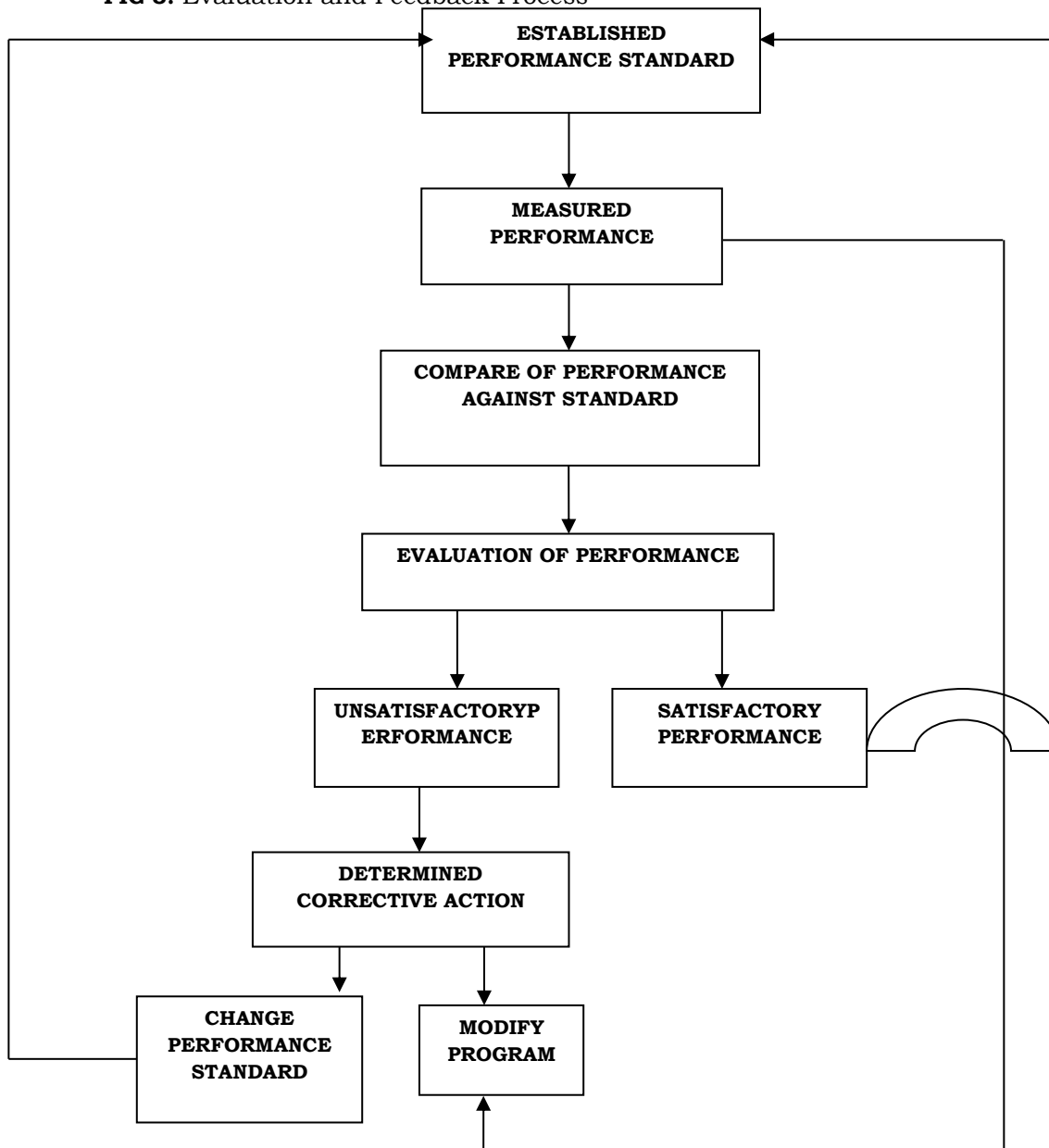
### **Role of Measurement**

Figure 2&3 shows the role of measurement of training effectiveness in graphic form. Figure 2 shows graphically measurement of training effectiveness; it measures how well training program is able to reduce the existing skill gap. Therefore, it is a measure of degree of reducing the 'skill gap' (difference between performance standard required and the initial skill level). Figure 3 as shown by Brown and Somerville (1980) define measurement of effectiveness as an iterative process of providing feedback to the management on progress recorded skill gap assessment.



**Figure 2** and source Garrett, J.E. & Brian, H.K. (2007)

**FIG 3:** Evaluation and Feedback Process



**SOURCE:** BROWN & SOMERVILLE (1982)

## **Key to Measurement**

HRD activities covers broad spectrum, there are many interpretation to the meaning and definition of training effectiveness, thus making the measurement a complex task. According to Bennet (1982) and Bennet & Langford (1979), six key criteria were established to define training effectiveness. This receives supports from over 23 researchers and writers in the field of human resource development and organizational behavior. These criteria includes the followings: (i) General effectiveness (e.g. goal settings, planning, etc) (ii) decision making, (iii) delegation (iv) communication, (v) Job knowledge, and (vi) relationship.

Although these criteria may not altogether fit into every organizations concept of HRD effectiveness, the basic point is that training and HRD can be classified into two main categories, skill enhancement and behavioral changes. Skill improvement may be achieved through training program such as seminars and workshops on specific and identified “skill gap”. On the other hand, behavioral change may show in form of attitude and mode of communication to supervisors, peers and subordinates Magerison (1982) and Gough (2006) further pointed out that that HRD and training must aligned with strategic direction of the organization and invariably it must be focus on organizational goal and culture. This is necessary to meet the ever changing operating environment such as trends in international and local markets, changing attitudes of workers, productivity requirement. Moreover, for HRD and training to succeed, it must receive the support of the top management.

## **Kirkpatrick’s model - Evaluation of Training**

Phillips (1997) defined training as a systematic process of examining the worth, value, or meaning of an activity or a process. Since a particular method of evaluation can be applied in all cases there is the need to develop several method of measurement. While there are several model and format developed for measuring HRD and training effectiveness, the most accepted model is that developed by Kirkpatrick. He suggested that there are four areas that required measurement, when analyzing the effectiveness of training program- that is emotional reaction, achievement of objectives, behavioral changes and organizational impact.

Kirkpatrick (1998) identified four level process of evaluation process of training evaluation. The order of the levels is reaction, learning, behaviors and result respectively.

### **Emotional Reaction**

Emotional reaction refers to the attitudes of participants at the end of training. An employee who has considerably gained skill and knowledge from the training will be willing to apply it on job, thus bring positive reaction. This could be a barometer for measuring employee’s general attitude, expectations and motivation. Although subjective, reaction also provides feedback on training style and content. Measurement is useful in fostering management supports for the training program.

Post training questionnaire can be used to measure emotional reaction. According to Baird, questionnaire should be directed towards measuring the training attitudes toward content, process (presentation style), definition of course objectives, attainment of course objectives and overall course value. The focus of the type of measurement is to investigate the attitudes toward the training material provided during training and obtain feedback from the trainee. The post training questionnaire methods have also received several criticism in terms of their accuracy and bias, also regarding forms ad type of questions included in the questionnaire can largely influence the answer provided in the questionnaire. Attempt at improving both pre and post training questionnaires have made with accuracy and bias issue in mind. The issue of quantification of measuring believes cannot be totally devoid of bias.

At reaction level, employee reactions are understood to show their perceived and subjective evaluation of the relevance and quality of the training program. According to Kirkpatrick, training program should at least first evaluate at this level to help improve to help improved on the conceptualization and design of the training program. Employee reaction at this level measured satisfaction derived from training.

### **Achieving Learning Objectives**

This is the second area of measurement, achieving learning objectives is a type of post training evaluation of knowledge and skill gained through the training intervention and which will ultimately translate to improving job performance. A positive emotional reaction and increase practical skill and knowledge of functional concept are indication of successful training and a requirement for meaningful HRD program.

Pre and post test methods of evaluating training effectiveness produce a result which are compared to a benchmark, the benchmark will help to show whether knowledge and skills have been obtained from the training experience. Pre and post test may be conducted sometimes in the class room workshop and simulation. Adopting this technique class room and simulation will yield direct result and provides less stressful and more positive learning environment. In either case, the result obtained should be compared to the learning objectives.

Games simulation and in-class workshop will facilitate the process of measurement in two ways. First, they provide a creative and less stressful environment for entities. Second, if properly designed and applied, they closely aligned employees work environment and resolves several issues related to training and HRD, by this it provides positive training reinforcement.

Learning can be described as the degree to which training has impacted on employee's work related attitude. It also connotes the level at which employee's skill is broadened and knowledge widened as consequences of training.

### **Behavioral Changes**

The third approach to measuring the effectiveness of training focused on the training behavioral changes. The third level of evaluation is about work –related behavioral changes which reflects in performance. This entails studying the changes in employees work related behaviors as a result of training While emotional reaction and knowledge gain can be easily accomplished immediately after training sessions, measuring behavioral changes requires some time lag for employee to fully implement the newly acquired skill and knowledge. Survey, observations and interviews of performance are some of the tools used in measuring behavioral changes. This is because the changes reflect most and best recognized in performance. The training measure can be linked with in-house employees' appraisal system and functions. It is very important to understand the concept of behavioral changes resulting from training using employee appraisal system because appraisal method might be too general, however, when using appraisal method, it must be use in the context of behavioral changes as a consequences of training. A general appraisal method will not separate behavioral changes from other factors outside the HRD and training activities.

A common method of measuring behaviors is to set initial performance objectives. Accomplishing the set objectives is a measurement of transferring emotional reaction and learned knowledge into behavioral changes.

Management by objectives (MBO) is one of the several methods of measuring performance changes. MBO formats enable personal work related objectives to be set with specific reference and focus on implementing training experiences. Morrissey, G. and Wellstead, W (1980) usually request the training participants to set personal and work related objectives in written form at the end of training session. These objectives are formalized and sent to



trainee after a period of one week of training. At approximately two months, follow up reports are sent to the trainee. The certificate of completion of training is issued to the participants after the feedback is received. Meeting the objectives set while designing and conceptualizing training is one of the main methods of measuring behavioral changes. Performance appraisal suffers the same type of bias as measuring emotional reaction by questionnaire when applied to measuring behavioral changes. Here the trainee supervisor is the individual who might be biased. Performance appraisal literatures seem to be aware of this shortcoming. The techniques of reducing evaluator bias includes using subordinate, peer and trainee feedback. The subordinate feedback is important as the trainee's subordinate is the direct recipients of behavioral changes and performance improvement. Peer feedback will give a closer analysis of behavioral changes since peer performed the same function alongside the trainee and finally, self feedback in a time series manner can be cost effective ways of measuring program towards meeting behavioral changes objectives. By using the three techniques, the likely bias of evaluation will be reduced to insignificant level or totally eliminated.

### **Impact on Organization**

The fourth area in Kirkpatrick model revolves around the impact of training and development on the organization. The measurement is based on the notion that training and human resources development must reflect the organizational culture and strategy. A training program is judged successful only if the training outcome aligned closely with the organization's goals. Measuring the impact on organization can be informed of measuring improvement in profitability, safety measure, etc.

Although measuring the effect on organization is apparently a difficult task because of complex structure of components part and its interaction with external environment. For example, separating pre and post training and development may not necessarily provide a distinct change in profitability or productivity. Also measuring trend in external environment impact may be a practical method of measuring training and HRD impact on the organization.

Kirkpatrick's model seems to point out four well conceived pillars on which measuring effectiveness in HRD and training is based. Emotional reaction and knowledge learnt are key concepts in evaluating training efficiency. These factors are in short term indication of the direction of human resources development of an organization. Behavioral changes and impact on the organizations is the other two measurement cornerstone of human resource development. These represent long term evaluation which indicates the steps towards meeting individual, management and organizational objectives.

As presented in Kirkpatrick's model, the model actually does not represent the required balance of four evaluations, they invariably complements one another. Without short term evaluation measurement, training runs the risk of imparting knowledge that is not transferable or irrelevant to the organizational goals. Without proper emphasis on evaluating behavioral changes and impact on the organization, training may be successful but its benefits to the organization may be quite limited or in some circumstances detrimental.

The fourth level attempts to examine training in terms of organizational outcomes. Phillips (1991) confirmed that Kirkpatrick's model is probably the widely accepted framework for classifying different areas of evaluation. The result of survey conducted by ASTD (1997) indicated that majority (81%) of HRD managers attached importance to evaluation and over half (67%) applied Kirkpatrick's model. The model was assessed as a valuable framework designed with four levels of measurement to evaluate the effectiveness of educational training. The widely accepted framework for the evaluation of training program has originated from Kirkpatrick. Kirkpatrick's model is consistent with a goal – focus approach (Dixon, 1996; Gordon, 1991; Phillip, 1991, 1997).

### **Distinction between Process and Result**

The traditional approach of determine the effectiveness of training program is to make an accurate estimates of the total benefits of participants derived from training and compared to their previous performance level. This is a way of linking the individual effect of training to Profit and Loss account of the organization.

For certain categories of training it may be possible; the performance of employees regarding certain operational task can be measured before and after the training through different approach. It is actually possible to measure the improvement in organizational performance resulting from training program, although the opportunity to conduct this kind of study is very limited. The outcome of the task must be capable of accurate measurement and must have direct and immediate impact on the sales value of the product. For instance, in sales department, the increase in sales volume from a training program by sales representative can reasonably be related to training with allowance for other associated changes in organizational environment.

According to some executives any training program that cannot be directly measure to see the impact on work performance should be given second thought. Therefore, the management needs to establish some acceptable criteria for measuring the effectiveness of training in other department beside operations, however, this might be a huge challenge.

### **Process of Training**

Besides focusing on the impact of training on organizational performance, it is possible to explore other approach by studying the organization and management of training. There are two major elements of training effectiveness, first is "output benefit" this is of course referred to as traditional approach of measuring training effectiveness, by this the individual performance improvement are measured as a consequences of training. Second is the training process effectiveness, this measured how well a training function delivered its services to the organization irrespective of the type of individual that attend the training. For example, at one end, the organization might have recruited high quality employee to perform training functions, however, despite huge investment committed to training not very much has been achieved in terms of desired outcome. On another hand, is a less resourceful organization but blessed with effective training personnel that assist the organization to get maximum returns from its training program.

It presupposes that the quality of employee that attends the training determines the effectiveness of training, in such situation the training management has little or no control over the issue of selecting participants to attend the training. Thus the difference between two extreme scenarios previously described lies on the manner in which training is managed, not only in training department but in the organization as a whole. This is referred to as training process.

### **Element of training**

Criteria for analyzing the effectiveness of training are not very obvious, but three element of measuring training can be identified. These are as follows; accurate identification of training needs; accurate selection of participants and appropriate course content.

The initial step is to set up target criteria from which losses can be identified, this depend on the specific objectives of the training. We can measure the deviation from ideal of incremental losses due to poor selection, weak identification of training needs and inappropriate content and so on.

### **Identification of training needs**

Training needs can be classified into two, organization and individual needs. Organization needs relates to how to succeed in the market and the activities required for the success.



The needs are met when the activities are structured to meet those identified needs. Individual needs are identified by matching the job specification with personal profile.

Employee's training needs can be identified through corporate system such as skill gap analysis, training needs assessment, performance appraisal, counseling session and job evaluation. For training to be very useful, it must be directly related to the core business activities. The best means of identifying employee skill gap is to rigorously match the job specification activity by activity with personal profile of the employee using an organizational modeling human resources management package. Through this training needs can be clearly revealed (Poulet, R. 2008).

### **Selection of participants**

Training should focus specifically at employee who needs it, and should provide appropriate course to fill the identified gap with regard to the employee's needs. Accordingly, training program should have a definitive statement about the target participants. This statement may be in form of brochure or annual training program. In most organization the actual selection of training participants is not done by the training managers, hence the effectiveness of training management are not definitely confined to training department. More so, there is the tendency to deviate from the ideal by feeding participant that is not truly fitted into the training program.

### **Appropriate course content**

From the above discussion, it is assumed that the participants have been selected based on the identified skill gap through a corporate rigorous training needs assessment process. It also assumes that the course content is designed to fulfill the skill gap. Next issue is the question of whether the course content is appropriately suit the purpose to which it is designed. Therefore, the degree of fit between the course content and the critical elements of the skill the training is designed for the targeted participants must be very high. This information can be obtained from administering questionnaires which seek to provide information on the aspect of course content that are well utilized on job. This will actually reveal whether the training met the objectives to which it's designed. Poulet, R. (2008) contends that if the content efficiency of the course is high, the trainer will be interested in further fine-tuning the knowledge to maximize the value to the participants, however, if the content efficiency is relatively low, this of course constitute waste of resources in terms of time and cost. Training is therefore defined as the process of providing training of whatever kind that meets the requirement of employee or participant that exhibit shortage of that skill and knowledge. Hence, the effectiveness of training process is shown by measurement, selection and content efficiency which represent the proportion of the training resources that have effectively consumed on the course.

A typical form of measurement of training effectiveness is the training process cost measurement; this measurement is obtained by multiplying together the cost of course in question with the effectiveness percentage. The cost includes: direct cost of trainers, accommodation, travels and so on. Other cost includes, overheads associated with the training centre or teaching rooms. This will show the overall cost consumed by the training. The information obtained when matched with associated outcome benefit will help to judge whether skill and knowledge improvement has actually taken place.

### **CONCLUSION**

It well acknowledged in training evaluation literature that the actual barrier and obstacle to training effectiveness comes from within the human resources development functions. For instance, the appraisal system may be inadequate to and poorly executed to identify the skill gaps. Some establishments do not have reliable job descriptions, the connection between training function and other personnel functions such as succession and career planning must be streamlined to facilitate proper synergy to take place. Other notable barrier may be political or structural in nature. To overcome this barrier training must be

defined in term of either training based on poor performance or defined based on organizational objectives, although both directly related.

Improvement in training effectiveness can directly be facilitated by the following, employee's awareness of objectives of training courses, continuity of training, and application of training in the work place and proper implementation of the program. A well designed and executed training will facilitates participant's involvement, attitudinal changes and this provides opportunity for application of new skills and knowledge in workplace, job commitment, employees' alignment to organizational visions and strategies (Shahrooz, F. 2012).

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